

L-93

400170

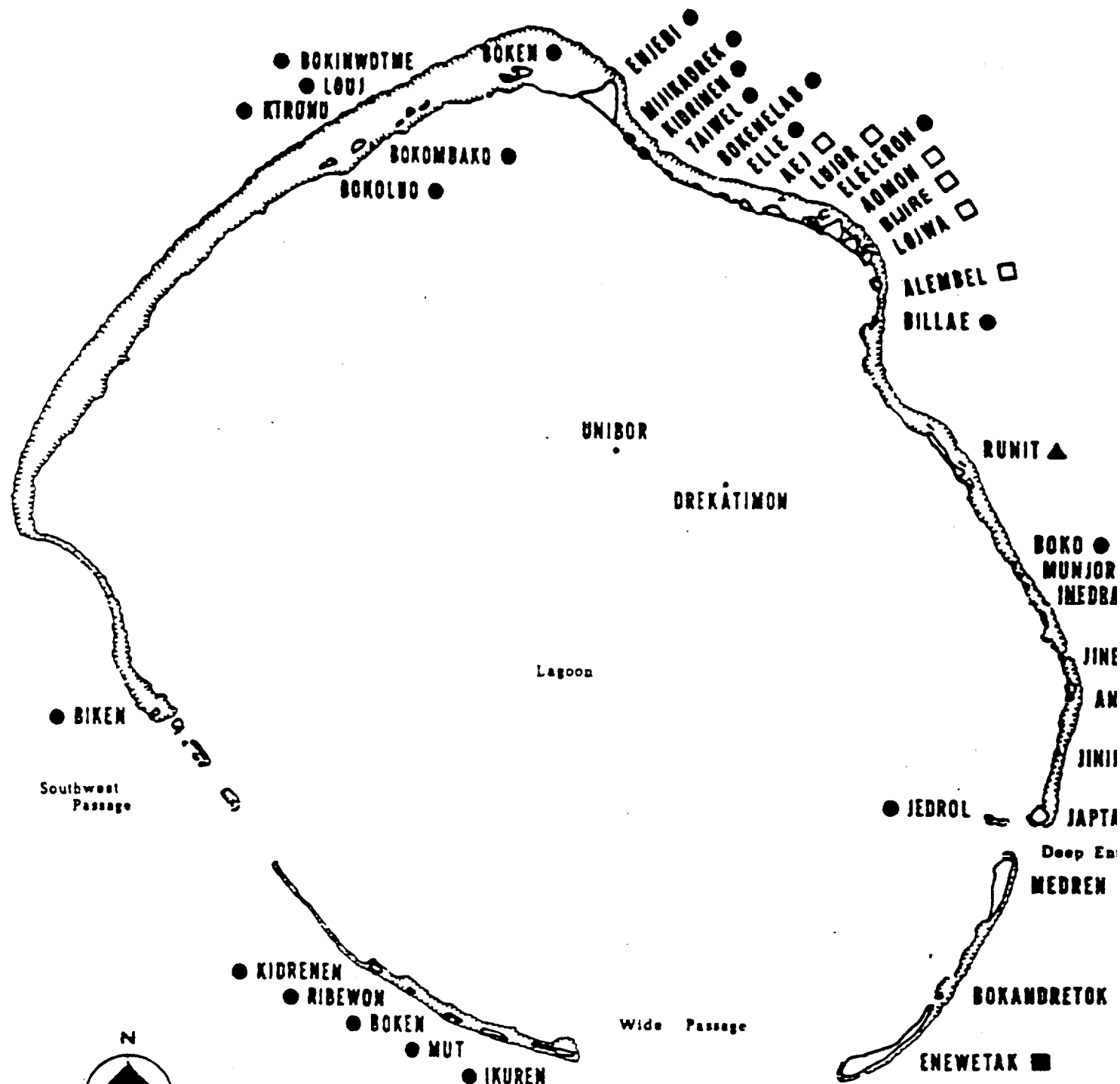
1987
DC

REPORT
on the
ENEWETAK FOOD AND AGRICULTURE PROGRAM
Fiscal Year 1987

OFFICE OF TERRITORIAL AND INTERNATIONAL AFFAIRS
UNITED STATES DEPARTMENT OF THE INTERIOR

John Rudolph's Files
Letter Files

5001531



ENEWETAK ATOLL

- - Living & Agricultural Island
- - Agricultural Islands
- - Food Gathering & Picnic Island
- ▲ - Quarantined

I INTRODUCTION

The Enewetak people returned to Enewetak in May of 1980 after an absence of 33 years. Prior to their return, an extensive radiological and debris cleanup program was completed. One hundred sixteen (116) new homes were constructed on 3 islands and 10 islands were planted with coconuts. Initially, breadfruit and pandanus were planted on 4 islands. Subsequently, various other foods have been planted.

During their absence from Enewetak the people of Enewetak lived on Ujelang, an atoll 125 miles southwest of Enewetak. Now that Enewetak is habitable the dri-Enewetak actively live on both atolls.

There are several major areas of DOI involvement in the resettlement of Enewetak Atoll. These programs interrelate and have the common goal of providing food and transportation for all of the people of Enewetak. These areas are described below.

II AGRICULTURAL PROGRAM

Background

Much of the natural vegetation on the inhabited islands of Enewetak Atoll was destroyed during World War II. During the subsequent testing operations, many of the islands were occupied by various facilities, and roads and airports were constructed. On Enewetak Island, concrete or asphalt covered much of the surface and in many cases the fragile topsoil layer was removed or displaced.

The southern residence islands of Enewetak, Medren, and Japtan were planted with pandanus, breadfruit, coconut and bananas along with garden vegetables such as melons, cabbages, and eggplants.

Program Summary

The various crops are maintained by local residents under the supervision of the contractor to the DOI and part-time Agricultural Consultant. The coconut palms have been weeded and fertilized on regular schedule in 1987. Circle weeding and fertilizer application is scheduled on Enewetak, Japtan, Medren and Ananij through 1988.

In March 1984, a complete brushing operation was initiated except for a 100' strip on the windward side and 50' strip on the remaining perimeter. All non-cultivated foliage was manually chopped down and left to decompose. This process will add humus to the soil, assist in retaining moisture and provide natural nutrients.

The northern islands of Aeji, Lujor, Aomon, Bijiri, Alembel, and Lojwa were planted at the request of the Enewetak people with the full knowledge that the coconuts would contain levels of Cesium 137, which would render them unacceptable for human consumption. The idea was, when the decision was made, in 1979, that continuing scientific efforts might produce a solution to the problem in the 6-8 years it takes to produce these nuts. Since then, DOE and DOI have been conducting studies on Bikini towards that end. However, until an acceptable solution is identified, agricultural efforts have been concentrated on the southern islands, which are now beginning to produce edible crops. The Council and people are aware that the northern island coconuts are not usable as a food source at this time.

In March 1987, an inspection of all southern agricultural islands was made as part of the program review. The following is a summary of the present number of surviving plants, their heights and cumulative bearing projections through 1990. The bearing projections have also been converted to projections for potential copra tonnage.

LIVE PLANT STATUS AS OF MARCH 1987

| PLANT TYPE | ENEWETAK | | MEDREN | | JAPTAN | | ANANIJ | | TOTAL | |
|------------------------|----------|-------|--------|--------|--------|-------|--------|-------|--------|--------|
| | | | | | | | | | | |
| | 1986 | 1987 | 1986 | 1987 | 1986 | 1987 | 1986 | 1987 | 1986 | 1987 |
| <u>COCONUT</u> | | | | | | | | | | |
| Planted | 7,941 | 7,941 | 11,572 | 12,502 | 2,892 | 2,892 | 897 | 897 | 23,302 | 24,232 |
| Present Count | 5,410 | 5,410 | 9,190 | 10,040 | 2,840 | 2,840 | 666 | 666 | 18,106 | 18,956 |
| Number Lost | 2,531 | 2,531 | 2,382 | 2,462 | 52 | 52 | 231 | 231 | 5,196 | 5,276 |
| Survival Rate | 68% | 68% | 79% | 80% | 98% | 98% | 71% | 71% | 77% | 79% |
| <u>PANDANUS</u> | | | | | | | | | | |
| Planted | 1,126 | 1,126 | 280 | 400 | 329 | 360 | 158 | 158 | 1,893 | 2,144 |
| Present Count | 410 | 625 | 117 | 229 | 166 | 170 | 71 | 71 | 764 | 1,095 |
| Number Lost | 716 | 601 | 163 | 171 | 163 | 190 | 87 | 87 | 1,129 | 1,049 |
| Survival Rate | 36% | 51% | 41% | 58% | 50% | 48% | 45% | 45% | 40% | 52% |
| <u>BREADFRUIT</u> | | | | | | | | | | |
| Planted | 500 | 510 | 203 | 203 | 148 | 156 | 30 | 30 | 881 | 899 |
| Present Count | 100 | 107 | 70 | 11 | 34 | 19 | 0 | 0 | 204 | 137 |
| Number Lost | 400 | 403 | 133 | 192 | 114 | 137 | 30 | 30 | 677 | 762 |
| Survival Rate | 20% | 21% | 34% | .06% | 23% | 13% | 0% | 0% | 23% | 16% |
| <u>BANANAS</u> | | | | | | | | | | |
| Planted | 100 | 100 | 63 | 63 | 30 | 30 | 193 | 193 | 193 | 193 |
| Present Count | 80 | 50 | 20 | 7 | 30 | 30 | 130 | 130 | 87 | 87 |
| Number Lost | 20 | 50 | 43 | 56 | 0 | 0 | 63 | 63 | 106 | 106 |
| Survival Rate | 80% | 50% | 31% | 12% | 100% | 100% | 67% | 67% | 46% | 46% |
| <u>WINDBREAK TREES</u> | | | | | | | | | | |
| Planted | 704 | 750 | 310 | 310 | 93 | 93 | 1,037 | 1,037 | 1,037 | 1,153 |
| Present Count | 600 | 716 | 200 | 215 | 63 | 28 | 863 | 863 | 959 | 959 |
| Number Lost | 104 | 34 | 110 | 95 | 30 | 65 | 174 | 174 | 194 | 194 |
| Survival Rate | 86% | 96% | 65% | 70% | 67% | 31% | 84% | 84% | 84% | 84% |

COCONUT PALM HEIGHT OF MARCH 1985-MARCH 1987

| | 3-4 FT | | | 4-6 FT | | | OVER 6 FT | | |
|---------------------------------------|--------|------|--------|--------|------|------|-----------|-------|-------|
| | 1985 | 1986 | 1987 | 1985 | 1986 | 1987 | 1985 | 1986 | 1987 |
| ENEWETAK | 1000 | 1000 | 800 | 1000 | 1000 | 1500 | 3000 | 3600 | 4000 |
| MEDREN | 500 | 500 | 1000 * | 2000 | 1500 | 1000 | 6700 | 6700 | 7400 |
| JAPTAN | 0 | 0 | 0 | 300 | 200 | 300 | 2500 | 2500 | 2700 |
| ANANIJ | 0 | 0 | 0 | 100 | 100 | 50 | 600 | 500 | 500 |
| *Replanted with coconuts from Ujelang | | | | | | | | | |
| | 1500 | 1500 | 1800 | 3400 | 1800 | 2850 | 12800 | 13300 | 14600 |

COCONUT PALM BEARING PROJECTIONS

AND

COPRA POTENTIALS

| | DATE PLANTED | ORIGINAL COUNT | PRESENT COUNT | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|-----------------------------------|--------------|----------------|---------------|------|--|--------|---------|---------|---------|---------|---------|
| ISLANDS | | | | | | | | | | | |
| ENEWETAK | 3/80 | 7,607 | 5,410 | 0 | 150 | 450 | 1,000 | 2,000 | 2,500 | 3,000 | 4,000 |
| MEDREN | 10/79 | 11,572 | 10,040 | 0 | 100 | 700 | 1,000 | 2,500 | 4,000 | 6,000 | 8,000 |
| JAPTAN | 8/79 | 2,892 | 2,840 | 0 | 300 | 850 | 1,100 | 1,800 | 2,200 | 2,400 | 2,800 |
| ANANIJ | 7/79 | 797 | 666 | 0 | 0 | 20 | 100 | 200 | 300 | 400 | 500 |
| TOTAL | | 22,868 | 18,956 | 0 | 550 | 2,020 | 3,200 | 6,500 | 9,000 | 11,800 | 15,300 |
| No. Nuts/Year @ 40 Nuts/Tree | | | | | 22,000 | 80,800 | 128,000 | 260,000 | 360,000 | 472,000 | 612,000 |
| | | | | | *For this report period the 260,000 nuts or 43 tons copra equivalent were all utilized as green drinking nuts and "spooning" nuts. Ripe brown nuts were brought over from Ujelang on the Metak II. | | | | | | |
| No. Tons Copra @ 6000 Nuts/Ton | Equivalent* | | | | 4 | 13 | 21 | 43 | 60 | 79 | 102 |

Coconut trees are now bearing on Enewetak, Japtan, and Medren; the main residence islands. These islands were not involved in the nuclear testing program except as residence and administrative centers. The breadfruit continue to do poorly with a few exceptions, and are particularly vulnerable to the salt spray and low season rainfall. Pandanus is now universally successful with 1095 established plants.

Two tropical typhoons back in the early 1980's have contributed to the breadfruit loss rate as has the lack of windbreak; however, breadfruit was only available on one section of Enewetak Island prior to World War II, and conditions are marginal for its cultivation.

The 1985 and 1986 Fertilizer Test Plot results showed clearly that both nitrogen and potassium are being utilized by the coconut palms. There is no further need to carry on the Fertilizer Test Plots. The results of the test plot showed that the application of Osmocote (N-O-K) 17-0-23 at the rate of 1-1/4 pound per palm per year will ensure adequate palm growth.

A nursery is well established on Enewetak Island, producing various tree seedlings, squash, eggplant, taro, guava, papaya, Chinese cabbage, head cabbage, tomatoes, banana, lime and breadfruit plants.

The propagation of breadfruit, pandanus, and various plants and vegetables will require participation on the part of the dri-Enewetak. Some families are growing bananas and papayas but to date interest in agriculture has been minimal, except for paid members of the work crews.

The DOI will continue through its Contractor to provide an Agricultural Consultant on a quarterly basis for two weeks to one month, who will work closely with the Contractor Station Manager and the agricultural crew and residents; and provide detail instructions of agricultural practices to follow and leave written recommendations to be carried out between visits.

In the past year a number of new plant introductions have been made. The three common taros grown throughout Micronesia are successfully established and plantings will be expanded in the coming two years. They are the common taro, Colocasia esculenta, which can be grown either as dry or wet (pit) culture method; Xanthosoma sagittifolium, strictly a dry land taro; and giant swamp taro, Cyrtosperma chamissonis, which can be grown only in taro pits close to fresh water. Also introduced for trial purposes were Guava, Passion Fruit (Lilikoi), Chinese Dwarf

Banana, Waimanalo Dwarf Papaya and Sour Sap. Expansion of taro pit culture will be the main emphasis in the coming year for the production of starchy foods. This will involve the digging of about 20 pits, each about 300 square feet and down to the fresh water lens which is anywhere from 5 to 8 feet deep.

The following shows current plants for new plantings through 1989. Individual sections follow which cover the program history and plans for the southern islands of Enewetak, Medren, Japtan and Ananij, as well as the garden project and the newly initiated taro pit project.

REPLANTING AND NEW PLANTING THRU 1989

*Taro Pits of about 300 square feet each will be dug on various and suitable Wetos.

III FOOD PROGRAMS

At the inception of the Enewetak Resettlement, there were no significant food bearing trees or crops in especially the southern islands. Thus, there was precious little food available for local consumption. In order to immediately support and sustain the population resettled from Ujelang, USDA basic commodities were issued quarterly to the people, augmented by the USDA's supplemental food service program (for elementary students, September to May). The DOI program also authorized a follow-up on community-wide supplemental food program consisting of commercially-procured food. Moreover, in order to complement the essentially imported food diet, local food was obtained and procured at Ujelang Atoll in the Marshalls and at Kosrae and Pohnpei Islands in the Federated States of Micronesia.

These foods were procured and conveyed to Enewetak on the community's motor vessel, the Wetak II during FY 87. This year the vessel made five round trips to Ujelang and five round trips to Kosrae. A total of 48,354 pounds of copra nuts were procured at Ujelang and 72,159 pounds of produce was procured at Kosrae. The fresh food procurement also assisted in stimulating local agricultural production and served to keep money in the local economies.

The food program was also incremented by the establishment of an on-island poultry project which produced fryers as well as laying hens. In 1987, 11,000 chicks were imported. The net results were 22,000 pounds of chickens available to the community. The side product of this program was the fertilizer produced by the chickens and used in the agricultural program.

The total amount of nutritional food, which is available to the community, has improved over the past few years, but the following supplemental food has been imported under the consultation of the TTPI Nutritionist through July 1987:

USDA

Enriched rice
Flour
Shortening
Evaporated milk
Canned chicken
Fruit cocktail
Peas
Fruit juice

SUPPLEMENTAL (Commercial)

Baby food (assorted meats,
fruits, vegetables)
Baking powder
Corned beef
Flour (enriched)
Pineapple juice
Mackerel in oil
Sliced pineapple
Sweet potatoes
Salt
Sardines
Soy sauce
Beef stew

Wetak II

Bananas
Pandanus
Grapefruit
Taro
Limes
Oranges
Tapioca
Sweet potatoes
Papaya
Cucumber
Mature coconuts
Drinking coconuts
Fish

Local

Garden produce
Coconuts
Fish
Live chickens

It should be noted that the program also provides another service to the dri-Enewetak, through the procurement, purchase, and delivery of kerosene which is used as a cooking fuel on Enewetak. This will remain the case until such time that local coconuts are harvested in sufficient quantities to provide a plentiful and uninterrupted supply of husks, the traditional cooking fuel. During the year, the program purchased and delivered 11,000 gallons of kerosene to the atoll.

The program also assisted the community by providing a worker trained in kerosene stove/cooker repair, to ensure the families' stoves were in good operating order.

IV TRANSPORTATION

The major, locally owned and directed transportation activity is the Wetak II, Enewetak's motor sail vessel. This 53 ft. schooner-rigged, fiberglass constructed ship was a gift of the U.S. Government in 1983 and was intended to provide the dri-Enewetak with a means of inter-atoll transportation and trading.

It is unique in that it is the only sail assisted trading vessel operating in Micronesia. In addition to sails, the vessel is equipped with a GMC 371 series diesel engine. Voyages are planned with an anticipated speed of six knots (6.9 mph). If this speed cannot be maintained under sail, the engine is used, usually in conjunction with the sails.

The vessel was launched and delivered to Enewetak in 1983. In order to operate the vessel on the high seas, maintain it, and manage finances, passenger operations and procurement functions, as well as crew training programs, an initial, management team of captain and engineer was hired. The present team joined the boat in May of 1984. There were five Enewetak crew members and they receive "hands on" instruction in sailing, boat handling, and maintenance, engine maintenance, navigation, cargo handling, seamanship, and safety procedures.

During FY 1987, the vessel made eighteen "extra atoll" voyages, traveling 11,120 nautical miles, carrying 111 passengers and roughly 300,000 pounds of cargo (100,000 pounds more than 1986). Typical trips were as follows:

Ujelang

To procure coconuts, transport cargo, carry mail and transport passengers.

Kosrae

To purchase fresh produce (fruits and vegetables), transport cargo, pick up supplemental food order of sardines, and transport passengers.

Kwajalein

To pick up supplemental food, kerosene and diesel fuel for the ship.

Majuro

To carry passengers, transport cargo and drydock.

Ponape

To pick up supplemental food order of sardines, carry passengers and cargo.

In addition, numerous trips are made inside the Enewetak Atoll for the purpose of fishing, food gathering, and ferrying passengers back and forth between the southern residential islands of Enewetak, Japtan, and Medren.

This is an ongoing program to train the Enewetak people to operate the Wetak II, free and independent of outside help. Unfortunately, at this time, additional training will be required through FY 1988-89.

V PROGRAM EXPENDITURES

| | <u>FY 87</u> | <u>FY 88*</u> <u>Estimate</u> |
|--------------------------------|--------------|----------------------------------|
| Food Programs | 275K | 310 |
| Agricultural Programs | 130K | 160 |
| Wetak II | 75K | 120 |
| Field Station Operations | 345K | 410 |
| Administration Grant to RMI | | 100 |
| Total | 825K | 1,100 |

* The FY 1988 House and Senate Appropriation Bills include funds (\$1.1 million in report language) to continue the Enewetak food and agriculture support program. The Administration did not request funding for this activity in the FY 1988 President's Budget.